

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow, which are supplemental to the arguments provided in an Amendment and Reply filed on February 12, 2008.

Status of Claims:

No claims are currently being cancelled.

Claims 15 and 19 are currently being amended.

No claims are currently being added.

This amendment and reply amends claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-20 are pending in this application.

Claim Rejections – Prior Art:

In the Office Action, claims 1, 3, 5, 7, 14, 15, 17 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2004/0221127 to Ang in view of U.S. Patent Publication No. 2003/0177335 to Luick and further in view of U.S. Patent No. 4,951,278 to Biber. Claims 2, 4, 6, 8, 9, 10, 11, 12 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ang in view of Luick in view of Biber and further in view of U.S. Patent No. 5,497,480 to Hayes. These rejections are traversed for at least the reasons given below.

In its rejection of claim 1, the Office Action asserts that column 1, lines 14-35 of Biber teaches that a communication command includes a destination computer number, a destination process number, a destination logical address, a transfer length, a sending source computer number, a sending source process number, and a sending source logical address. Applicants respectfully disagree. In particular, while Biber describes that a destination address, operation code, source address, sequence number and length code are included in a header of a packet, there is no teaching or suggestion in this portion of Biber with respect to a destination process number and a sending source process number that are included in the packet header.

Accordingly, claim 1 is patentable over the cited art of record.

Still further, with respect to the rejection of claim 3, the Office Action incorrectly asserts that paragraph 0064 of Ang teaches the features recited in this claim. Rather, paragraph 0064 of Ang describes a pipeline system that contains conflict detection hardware to ensure a minimum gap between an instruction Ij and any conflicting instruction, whereby such features have nothing at all to do with limiting the number of communication commands to be processed simultaneously to a same destination computer from a sending computer, in order to increase a hit ratio of a translation lookaside buffer.

Therefore, dependent claim 3 is patentable over the cited art of record for these additional reasons. Dependent claim 14 recites similar features as a “means” element, whereby that claim is also patentable over the cited art of record.

Also, with respect to the rejection of claim 12, the Office Action incorrectly asserts that column 2, lines 27 et seq. of Hayes teaches the features recited in that claim. Rather, column 2, lines 27 et seq. of Hayes describes a method and apparatus for removing a page table entry from TLBs, whereby a request packet to remove a page table entry is issued by a first TLB, that request packet is received by a second TLB in which a predetermined source is specified in the request packet. If the second TLB contains the page table entry to be removed, the removal of the page table entry is performed, and a reply packet is sent to the first TLB to notify it of the removal. This description in Hayes does not teach or suggest that a command is sent that includes a maximum simultaneous process number, whereby when that number is two or more, a command identification number indicative of an identification number of a command to be processed simultaneously is added to each of communication packets to designate a TLB entry to be used as a reception source. In other words, the description of a process to remove a page table entry in a TLB based on a request made by another TLB, is not related to the specific features recited in claim 12.

Accordingly, dependent claim 12, as well as claim 13 that recites similar features, are patentable over the cited art of record.

With respect to independent claim 15, that claim recites, among other things:

determining, when a communication command including information of that one of the computers which is a sending source is issued from said processor, one of the translation

look aside buffer entries which is to be used in accordance with the computer of the sending source by means of said reception section. (emphasis added).

Pages 4 and 5 of the Office Action refer to paragraph 0013 of Luick, which states that “Typically, in order to obtain a real address for a data reference operation (e.g., a load or store operation), a portion of the virtual address is used to access a table . . . These operations may require multiple clock cycles.” This portion of Luick explains that a TLB is divided N-ways, and is indexed in part of a Virtual Address. However, the present invention according to claim 15 indexes an entry of a TLB not based on a Virtual Address but rather based on a sending source. Accordingly, the above features as recited in claim 15 and paragraph 0013 of Luick are not especially pertinent to one another.

Also, Luick uses a TLB inside a processor, whereby the present invention according to claim 15 uses a TLB of a communication device, which is different in structure and in operation from Luick’s TLB.

However, to expedite prosecution, independent claims 15 and 19 have been amended to explicitly recite that the processor does not carry out any address conversion but instead issues out the communication command and a logical address to the communication device, whereby the prior art processors must perform address conversion.

Conclusion:

Since all of the issues raised in the Office Action have been addressed in this Amendment and Reply, Applicant believes that the present application is now in condition for allowance, and an early indication of allowance is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741.

Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Respectfully submitted,

Date September 19, 2008

By Phillip J. Articola

FOLEY & LARDNER LLP
Customer Number: 22428
Telephone: (202) 945-6014
Facsimile: (202) 672-5399

George C. Beck
Registration No. 38,072

Phillip J. Articola
Registration No. 38,819